

REMARKS

Claim 1 has been amended. Claims 11 and 12 have been added. Support for claim 11 can be found in Figure 4, and the text on page 10, lines 12-15. Support for
5 claim 12 can be found in Figures 3 and 4.

It is noted that a preliminary amendment was filed with the application that changed claim 7 from being multiply dependent to referencing only claim 1, and new claims 8-10 were added which were similar to claim 7 but respectively referenced claims 2, 3 and 4. These claims have not been addressed in the office action.

10 Claims 1-12 are active in the application.

Claims 1-7 were rejected under 35 USC 112, second paragraph, for being indefinite in reciting “a plurality of through hole array boards each made of a plate like board”. Claim 1 has been amended to clarify the language and traverse the indefiniteness rejection.

15 Figs. 9A, 9B, 10 and 11 have been amended to add the label “Prior Art” pursuant to the requirement in the Office Action.

The drawings were objected to under 37 CFR 1.83(a) for not showing every feature claimed. To traverse this objection, Figs. 12, 13, and 14 have been added. Also, the specification has been amended to provide descriptions of Figs. 12, 13 and 14. The
20 descriptions and new figures are supported by the text of original claims 5, 6, and 7, and the patent specification text. It is clear from page 1 of the application at lines 11 to 21, that the invention is concerned with using an optical array to allow alignment of optical fibers with a large number of optical fibers. This is re-stated on page 4 of the application at lines 3-11, where coupling (so called passive alignment) between an array of optical
25 fibers and optical devices is performed. Further, it is stated on page 5, lines 19-23, that “when the optical fiber array and an optically functional device array having a device interval corresponding to the optical fiber interval of the optical fiber array are combined with each other, an optical module can also be provided” (emphasis added). In view of this, the features shown in Figures 12-14 and added text do not constitute new matter.

30 Claims 1-4 were rejected under 35 USC 102(e) as being anticipated by US patent 6,633,719 to Basavanhally et al. This rejection is traversed by amendment to claim 1.

Claim 1 requires that the boards have an identical shape and identical hole arrangement relative to one another and that the fibers are fixed by relatively displaying the boards. With references to Figures 1a-c, 2, and elsewhere, the Applicant teaches using array boards having the same configuration (outer dimension, hole shape, number of rows, etc.). Therefore, if the boards are lined up, all of the holes are aligned. In this state, the fibers are inserted, then, by relatively displacing (offsetting) the boards, the fibers are held with the boards. This process and board configuration is shown in Figures 1a-c.

In this respect, the invention has a number of advantages. It is not necessary to prepare a plurality of different kinds of boards, or to control the alignment of different kinds of boards. Rather, with the invention, two or more of the same array boards are sufficient to provide for a fiber array.

In sharp contrast, Basavanhally teaches inserting the plates 106 and 108 into frame 102. The hole arrangements in plates 106 and 108 are different from each other. In particular, Basavanhally teaches that the plates have 180 degree in plane rotation relative to each other (see column 5, line 16; column 6, line 43, etc.). These plates are held in the common frame for holding the fibers. Thus, Basavanhally fails to teach using the same boards in the same configuration and offsetting the boards for fixing the fibers.

With respect to dependent claims 4 and 8, Figure 4 of the application disclosed an embodiment where plates 10a, 10b, and 10c are relatively displaced so that the fibers are angled. Basavanhally et al., by comparison, does not teach or suggest that the optical fibers 101 can be disposed at a non-perpendicular angle with respect to the plates 106 108. Basavanhally et al. does teach that a third plate can “improve the angular precision of the immobilized fiber” (see col. 6, lines 6-9), but there is no teaching or suggestion that the fiber can be immobilized at a non-perpendicular angle. Fig. 7 illustrates the fiber 101 at a perpendicular angle. Also, it is noted that Basavanhally et al. teach that the fibers can be immobilized in a “desired position”, but does not teach or suggest immobilizing fibers with a *desired non-perpendicular angle*.

The Office Action states that claims 1-3 were rejected under 35 USC 103(a) as being unpatentable over Basavanhally et al. in view of US patent 5,446,815 to Ota et al. It appears that the reference to claims 1-3 is erroneous, and in fact claims 5-7 were rejected

in view of the Basavanhally-Ota combination. Claims 5-7 are patentable over the combination as a result of the amendment to claim 1. Neither Basavanhally et al. nor Ota et al. teach or suggest a microlens array or optically functional device array in combination with an optical fiber array constructed from boards having an identical shape and identical hole arrangement relative to one another and that the fibers are fixed by relatively displaying the boards.

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1-12 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees for the petition or for entry of this amendment to Attorney's Deposit Account No. 50-2041 (Whitham, Curtis & Christofferson P.C.).

Respectfully submitted,



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Amendments to the Drawings

In response to the Examiner's requirement, Figs. 9A, 9B, 10 and 11 have been labeled "Prior Art". Annotated sheets with the addition in red and replacement sheets are
5 attached to the end of this amendment.

New Figures 12, 13, and 14 have been added. Support for the subject matter shown in Figures 12, 13, and 14 can be found in originally filed claims 5, 6, and 7.

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FIG. 9A
Prior Art

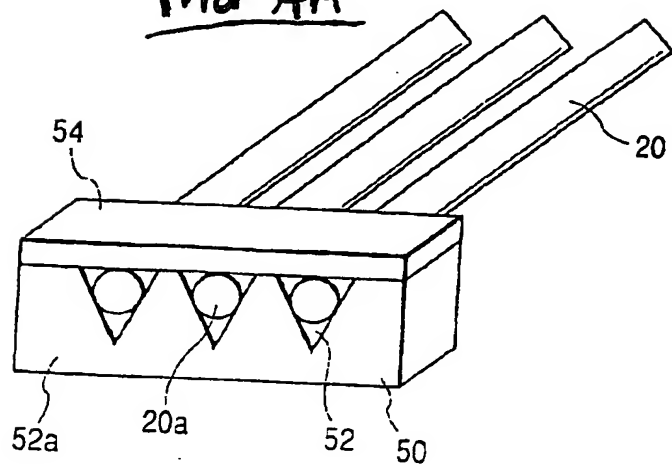
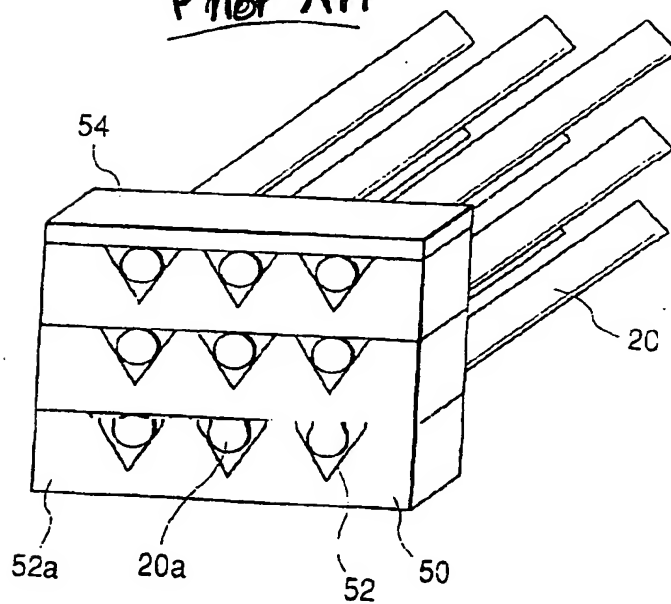


FIG. 9B
Prior Art



~~6/6~~ 6/7

FIG. 10
Prior Art

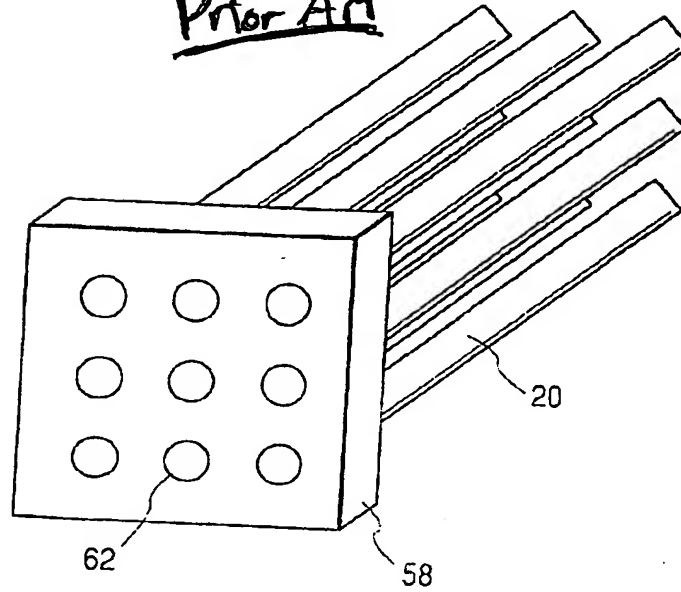


FIG. 11
Prior Art

